

StarTrack Environmental Performance Reporting

BOC Gases, Kittery, ME Facility

Facility Profile

An overview of the reporting entity to provide a context for understanding and evaluating information in subsequent sections.

- 1.1. Name of Company; name and location of facility:
- 1.2. Contact Person:
Title: **Jim Merriam, Manager Environmental Affairs**
Address: **BOC Gases, 100 Mountain Ave., Murray Hill, NJ 07974**
Phone: **908-771-1270**
Title: **Brian Stankovich, Facility Operations**
Address: **BOC Gases, 9 Ranger Dr., Kittery, ME**
Phone: **207-439-2400**
- 1.3. Major products/services of facility: **Liquid Oxygen, Nitrogen and Argon**
- 1.4. Facility information:
Number of employees: **25**
Indicator(s) of production scale for use in normalizing (e.g., product mass/amount/quantity)
Product volume (MMscf)
- 1.5. Reporting period (e.g., fiscal/calendar year) for information provided (unless otherwise noted).
FY98
- 1.6. Date of most recent previous report, if any. **N/A**
- 1.7. Significant changes in facility size, products/services, that have occurred in the reporting period.
None, however the facility has been converted to remote operation during night hours.

Policies, Organization & Management Systems

A statement of public commitment to the elements of responsible environmental management and how you have implemented organizational structures and management processes intended to fulfill that commitment.

- 2.1. Overview of environmental policy and of management programs in place to achieve the objectives of this policy, such as: employee orientation and awareness programs, environmental risk assessment, environmental accounting, performance evaluation, internal communications, linkages between management performance and compensation.

The Kittery facility of BOC Gases is an ISO 14001 certified facility. In June 1997, Kittery was the first industrial gas facility in the United States and the first of any facility in Maine to achieve this certification. To obtain ISO 14001 certification, the facility established and is

implementing a comprehensive Environmental Management System (EMS). The site is audited by a third party every six months to verify the EMS is working. While the international ISO 14001 standard requires many specific EMS elements (see below), at a minimum, it requires a commitment to compliance with regulatory requirements, continual improvement, and prevention of pollution. The Kittery EMS is based on several enhancements to BOC Gases Corporate Environmental Management System.

The Kittery facility also received the Maine Governors Award for Environmental Excellence in September 1998 as a result of its many environmental achievements. Some of these include:

- **A new State-of-the-Art Truck Wash System to treat washwaters prior to discharge**
- **Additional secondary containment of liquid chemicals to prevent releases to the environment**
- **Noise reduction measures on operational equipment**
- **New procedures to maximize efficiencies of water, energy, and chemical use**
- **School Tours and training of Local Emergency Responders**
- **White paper recycling program**
- **Enhanced employee environmental training programs**

A copy of the environmental policy for the facility is provided on the following page.

Kittery Site Environmental Policy

This policy applies to all activities at the Kittery site except for sales and customer service.

BOC Gases Kittery site is committed to continual improvements in environmental performance through implementation of our Environmental Management System (EMS). The EMS will be an integral and seamless part of our business process and is among the highest organization priorities. This policy was developed specifically for the Kittery site and is consistent with The BOC Group and BOC Gases Corporate Environmental Policies.

In particular, we are committed to:

- Comply with all relevant regulatory, BOC Gases Americas, and Group environmental requirements.
- Conduct our activities in a manner to reduce waste to the extent practicable (pollution prevention) as well as minimizing any adverse impacts to the environment or to the local community.
- Maximizing waste recycling and where this proves not to be possible, dispose of wastes in a sound environmental manner.
- Conduct an assessment of environmental impacts for any new facility activity or modification in order to eliminate or minimize identified impacts.
- Using materials and resources as efficiently as possible while improving profits.
- Include measures in our emergency preparedness plans to be taken to notify applicable authorities and prevent/minimize environmental damage.
- Monitor our environmental performance and where appropriate investigate any non-conformance's identified.
- Conduct our operations in a manner to protect the wetlands on or adjacent to the Kittery site.
- Provide our employees with the necessary environmental training needed to help them conduct their activities in an environmentally sound manner.
- Take actions to respond to any legitimate concerns or inquiries from our employees, neighbors, and other stakeholders.
- Maintain open communication with the local community concerning our activities, environmental programs, and emergency response capabilities/issues.
- Encourage our suppliers and contractors to conduct activities in an environmentally responsible manner.

The EMS and site environmental objectives and targets will be reviewed and updated, as appropriate, annually (at a minimum) by the "Pollution Prevention Team" and approved by the Site Management Team.

This Policy will be communicated to all site employees and displayed in a prominent location within the facility. The Policy will be available to all stakeholders upon request.

Coordinator

Brian Stankovich
Site

Environmental

In implementing ISO 14001, the facility has:

- **Defined the organization's environmental policy ,**
- **Identified its aspects that can have a significant impact on the environment ,**
- **Implemented a procedure to identify its legal (regulatory) and other requirements,**
- **Established documented environmental objectives and targets,**
- **Set a time frame for achieving its objectives and targets,**
- **Planned a method for achieving its objectives and targets ,**
- **Implemented procedures for receiving, documenting and responding to communication from external interested parties,**
- **Prepared an EMS Manual,**
- **Documented procedures to monitor and measure the key characteristics of its operations and activities that can have a significant impact on the environment ; and on a continuing basis the facility:**
- **Trains its employees to be aware of the importance and operation of the environmental management system**
- **Conducts internal audits of its environmental management system and regulatory compliance**
- **Hires an ISO registrar to audit its environmental management system**
- **Conducts top management reviews of its environmental management system every six months**
- **Takes corrective actions wherever necessary**

In addition to the requirements of ISO 14001, the Kittery facility subscribes to the following:

- **Total Quality Management Program,**
- **ISO 9000 Certification,**
- **CMA Responsible Care,**
- **International Chamber of Commerce Charter for Sustainable Development.**

The Kittery facility also participates in the US EPA-NE StarTrack Program.

The facility employs the following environmental management techniques:

- **Environmental Best Management Practices**
- **Pollution Prevention Planning**
- **Waste Minimization Planning**
- **Risk Assessment, and**
- **Compliance and EMS Auditing**

2.2 Organizational structure and responsibilities (e.g., senior management, special staff, operating staff) for oversight and implementation of environmental policies.

The Kittery facility has defined, documented and communicated roles, responsibilities and authorities in order to facilitate effective environmental management. Management provides sufficient resources for the implementation and control of the environmental management

system. Resources include human resources and specialized skills, technology and financial resources.

Kittery's top management has appointed a specific management representative (Site Environmental Coordinator) who, irrespective of other responsibilities, has a defined role and responsibility for a) ensuring that environmental management system requirements are established, implemented and maintained in accordance the International Standard; and b) reporting on the performance of the environmental management system to top management for review and as a basis for improvement of the environmental management system.

The Kittery Site Environmental Coordinator is responsible for management, authorization of resources, implementation and maintenance of the Site EMS, as well as reporting environmental performance to Kittery top management to facilitate EMS improvement. Brian Stankovich has been appointed as the Kittery, Maine Environmental Coordinator. He also leads the EMS Management Review and the Site Pollution Prevention Team meetings.

All Site Operation Departments and employees are responsible for assisting in the development and implementation of the Site EMS. Pollution Prevention meetings are conducted three times per year by the facility Pollution Prevention Team. The Team reviews prior meeting minutes, site improvement projects, environmental audits, and the Site Environmental Plan. Additionally, procedure WI-153-39 identifies Management Review Procedures for the EMS at the Kittery Site.

WI-153-39 identifies the Site Pollution Prevention Team and the Roles and Responsibility of Kittery employees with respect to environmental, safety, and quality management. The remaining members of the Pollution Prevention Team are responsible for assisting the Site Environmental Coordinator with EMS implementation while ensuring that site environmental objectives and targets are achieved. The team is responsible for conducting annual reviews of facility and department-specific programs, and preparing appropriate updates to the Site Environmental Plan.

BOC Gases Environmental Affairs Department personnel are also identified in WI-153-39. Environmental Affairs conducts audits of Kittery's EMS at least annually. In addition, Environmental Affairs facilitates Kittery's development and implementation of its EMS, as appropriate.

2.3 Management systems for company-specific environmental issues, such as supplier and supply chain, outsourcing, and new product development.

The systems described in sections 2.1 and 2.2 above are designed specifically to address the products and environmental and operational affairs of the Kittery production facility.

2.4 Status and date of any external environmental certification (e.g., ISO 14001).

ISO 14001 Certified June 1997

Community Relationships

Information on the process and methods by which the facility interacts with its community.

- 3.1 Policies/procedures for considering community impacts in decision-making.

There is an active community outreach program which includes educational school tours of the facility and emergency preparedness seminars co-sponsored with the LEPC. Kittery is also an active member in the local Kiwanis. The local community has received the outreach programs enthusiastically but has not expressed concern or desire to participate in an advisory capacity.

BOC works to understand and address potential community concerns before problems develop. During EMS implementation, BOC identified a potential for community concern due to noise from the facility (although no such concerns had been reported). As a result the facility implemented noise reduction measures to prevent a problem from developing. As a major user of electrical power, BOC cooperates with Central Maine Power Co. to address issues associated with peak periods and system overloads which might otherwise impact the community.

- 3.2 Coordination with local emergency responders (e.g., training, communication regarding risks associated with operations and / or regarding chemicals used).

BOC works closely with the LEPC and has cosponsored regional emergency preparedness seminars regarding the properties of industrial gases and how to respond to them if an emergency were to occur.

- 3.3 Communication with facility neighbors regarding procedures and evacuation plans that may be needed in case of an incident.

The Kittery site has trained and will work with local emergency response agencies to implement evacuation procedures in the unlikely case of a significant incident.

Management Performance

Indicators of performance regarding compliance with applicable mandatory standards, and adherence to internal policies and standards.

- 4.1 Summarize results of StarTrack compliance audit, using the following categories:

Violations resulting in serious actual harm to public health or the environment, including violations resulting in significant economic benefit, imminent and substantial endangerment to health and the environment, criminal violations, and violations of administrative or consent orders.

NONE

Formal enforcement actions: Notices of Violation (NOV's) and Notices of Non-Compliance (NON's) issued by states, administrative orders, etc.

NONE

Regulatory program implementation violations such as deficiencies regarding instrument calibration, sampling protocols, container management, etc.

One deficiency involving the operation of the monitoring system for an underground fuel storage tank was discovered and corrected. Three non-conformances to company procedures, which were not regulatory non-compliances were also observed and corrected.

Record keeping and reporting violations such as deficiencies with monitoring reports, waste manifests, contingency plans, etc.

NONE

4.2 Summary of any management system deficiencies identified by the StarTrack EMS audit.

No non-conformances to the ISO 14001 standard were reported in the audit. One documentation error which did not represent a non-conformance to the standard was noted for improvement.

4.3 Summary of any corrective action subsequent to the StarTrack audits.

All items were corrected.

4.4 Number, volume, and nature of unauthorized releases to land, air, and water, including: (1) accidental or episodic releases (e.g., chemical spills, oil spills) and (2) exceedances of permits or licenses.

NONE

4.5 On-site remediation activities including nature and cost, if available.

NONE

Operational Performance

Indicators of operational performance regarding key aspects of environmental performance.

Kittery has had a strong environmental and pollution prevention program since the early 1990s. Therefore, many improvements have occurred on-site prior to ISO 14001 implementation and prior to entering the Star Track program. As a result, it is often very difficult to show additional dramatic improvements in environmental performance.

Inputs

5.1 Electricity use (kWh)

Purchased (describe fuel source): **Purchased from Central Maine Power Company. Central Maine Power Company distributes power purchased from non-owned generating facilities. Fuel used by the various sources include #6 oil, wood, hydro and nuclear.**

Self-generated (describe fuel source): **The site has a small boiler to keep lines from freezing in the winter and for emergency lighting. This boiler burns #2 fuel oil.**

5.2 Other Energy Use (BTU equivalent)

Fuel Oil **NONE** for facility operations
 Coal **NONE**
 Natural Gas **NONE**
 Other (Specify) **NONE**

5.3 Total Energy Use (in BTU equivalent: 3412.13 kWh = 1 BTU)

Energy Use at the Kittery Air Separation Plant is measured as Specific Power which is a normalized measure of energy used per unit of production (kw/ccf). A primary measure for determining plant effectiveness is the Specific Power. As a result the Kittery plant implements operating procedures and has improved equipment efficiencies to lower the specific power to the maximum extent. However, external factors not under the control of the Kittery plant effect specific power such as climate temperatures, customer demand, shutdowns due to external issues (e.g. electricity curtailments), etc. Since specific power rates have a close relationship to our product costs, this information is confidential.

5.4 Total water use (in gallons).

The principal use of water at the Kittery site is for a cooling tower to cool the large compressors at the plant. Below is the water use history at the Kittery plant since 1994. While total water use has increased somewhat, water use per unit of production has improved. This is primarily as a result of increased Cycles of Concentration for the water. In essence, Cycles of Concentration means the number of times the water is reused/recycled prior to discharge. The Kittery plant went from an average of 9 Cycles of Concentration in 1994 to 12 Cycles of Concentration in 1998. In other words, the water is recycled for cooling 3 additional times now as compared to 1994. This reduces overall water use. It should be noted that these Cycles of Concentration cannot be further increased without causing substantial scaling of the cooling system which would cause reduced energy efficiencies and significant operational problems.

	Water Use FY98	Water Use FY97	Water Use FY96	Water Use FY95	Water Use FY94
Non-normalized (000) Gallons	40,397	39,649	35,984	34,936	36,133
Normalized	0.92	0.92	0.91	0.93	0.98
Normalization factor (M)	4395	4297	3945	3769	3702

Outputs

The BOC Kittery facility has been designed and is operated and maintained so that air emissions are insignificant. As a result, no air permits are required and no emissions or releases are reportable or tracked under TRI, CERCLA, or any other statute.

5.5 Emissions of key air pollutants: CO, lead, VOCs, NO_x, PM₁₀, SO_x, other pollutants of community concern (pounds).

Negligible (see above) .

5.6 Summary of any noise or odor complaints. **NONE**

5.7 Emissions of greenhouse gases: CO₂, methane, N₂O, halo-carbons, other (pounds).

Negligible (see above)

5.8 Emission of ozone-depleting chemicals (pounds).

R12 and R22 are used at the Kittery site as refrigerants. Kittery has focused pollution prevention programs on these chemicals to reduce their use. The following table shows the dramatic improvements that have occurred at Kittery since 1994.

Freon Usage in Motor Vehicle Maintenance	Freon Usage FY94	Freon Usage FY95	Freon Usage FY96	Freon Usage FY97	Freon Usage FY98	Target FY99
R12	4495	725	796	435	471	471
R22	218	145	145	471	0	218

5.9 Chemical release data, including data reportable under all applicable statutes.

The BOC Kittery facility has been designed and is operated and maintained so that air emissions are insignificant. As a result, no air permits are required and no emissions or releases are reportable or tracked under TRI, CERCLA, or any other statute.

5.10 Emissions information on chemicals your company/facility has determined to be significant and a focus for reductions programs.

(See 5.8 Ozone Depleting Chemicals)

5.11 Hazardous waste generated and management type (e.g., incinerated with energy recovery, landfilled, deep well injected).

The Kittery Air Separation plant no longer generates hazardous waste since it is able to reuse its used oil which has been in contact with freon refrigerants.

Hazardous Waste Generation	FY95	FY96	FY97	FY98	Management
Used oil with Freon (Gal)	0	50	0	0	Burn - energy recovery

5.12 Non-hazardous waste generated and management type (e.g., incinerated with energy recovery, landfilled).

Non Hazardous Waste Generation	FY95	FY96	FY97	FY98
Antifreeze (Gal)	135	180	165	110
Fluorescent bulbs (Lbs)	0	15	0	100
Used Oil (Gal)	1555	1185	1430	1910*
Oil filters (Gal)	900	960	1150	900
Oily Sorbent Pads - Prod. (Lbs)	350	1050	250	300
Oily Sorbent Pads - Distrib. (Lbs)	300	1050	1250	950
Oil soaked Stones (Gal)	0	55	0	0
Oily drain solids (Lbs)	0	700	700	0
Oily Water (Gal)	0	0	205	0
Used Paint (gal)	0	0	55	0
Parts Cleaner (Gal)	0	0	0	0
Miscellaneous (Gal)	0	0	0	61

*** Used oil generation increased in 1998 as a result of operating the new truck wash treatment system. The amount of used oil generated typically is associated with how much equipment maintenance is conducted.**

5.13 Discharges to water, by type (pounds)

Chemical oxygen demand (COD) N/A
 Biological oxygen demand (BOD) N/A
 Priority heavy metals N/A
 Persistent organic pollutants (POP) N/A

Product Performance

Indicators of the environmental performance of the facility's product(s).

6.1 Major post-production environmental impacts associated with the life cycle of products and services.

None. In fact, Kittery's products (Oxygen, Nitrogen, and Argon) can be used for many environmentally beneficial purposes (e.g. oxygenation of streams, liquid nitrogen to recycle solvents, oxygen to improve sewage treatment plant operations, etc.)

6.2 Programs or procedures to prevent or minimize potentially adverse post-production impacts of products and services, including life cycle analysis, product stewardship initiatives, and design for the environment.

BOC Gases has implemented a product stewardship initiative through the Responsible Care program. The principal aspects of this program involves providing information and training to our distributors and customers to safely handle our products.